STATUS OF THE HYDROACOUSTIC NETWORK OF THE INTERNATIONAL MONITORING SYSTEM, COMPREHENSIVE NUCLEAR-TEST-BAN TREATY

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ABSTRACT

To verify compliance with the Comprehensive Nuclear-Test-Ban Treaty (CTBT), the Provisional Technical Secretariat (PTS) of the CTBT Organisation (CTBTO) is establishing the International Monitoring System (IMS), a global network of seismic, infrasound, hydroacoustic and radionuclide sensors to detect, identify, and locate the signals generated by a nuclear explosion. The IMS hydroacoustic network, designed to monitor the major world oceans, contains eleven stations located with an emphasis on the vast ocean areas of the Southern Hemisphere. Two quite different sensing techniques are employed in the hydroacoustic network; hydrophone sensors, which effectively cover large ocean areas but are quite complex and expensive, and seismic detectors on small islands which are less effective, but considerably simpler and cheaper.

Presently three of the planned hydroacoustic network stations exist, while the remaining eight stations will be new installations. The establishment of each hydroacoustic station requires a survey to ensure the suitability of the site, the installation of new equipment or the upgrade of existing facilities, and finally a period of testing and certification. The site survey requirements have been completed for four of the stations, and two additional surveys are planned to begin during 1999. Equipment for two new hydrophone stations and one new island seismometer station is under development with installation and initial operational testing scheduled for early in 2000.

Key Words: hydroacoustic station, International Monitoring System